

**AN HIV TRANSCRIPTION REPRESSOR COMPLEX AND COMPOSITIONS  
AND METHODS BASED THEREON**

ABSTRACT

The molecular mechanism of YY1/LSF-associated repression of HIV-1 is described herein. More particularly, an HIV transcription repressor complex containing YY1, LSF and HDAC1 is described. The invention is based on our discovery that (1) HDAC1 co-purifies with the LTR-binding YY1-LSF repressor  
5 complex; (2) the domain of YY1 that interacts with HDAC1 is required to repress the HIV-1 promoter; (3) the expression of HDAC1 augments repression of the LTR by YY1, and (4) the deacetylase inhibitor trichostatin-A blocks repression mediated by YY1. This novel link between HDAC1 recruitment and inhibition of HIV-1 expression by YY1 and LSF, in the natural context of a viral promoter integrated into  
10 chromosomal DNA, supports novel HIV therapies described herein and has significant implications for the long-term treatment of AIDS.